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CLAIMS

What is claimed is:

- 1. Poly(caprolactone fumarate).
- 2. A copolymer comprising: caprolactone units; and fumarate units.
- 3. The copolymer of claim 2 wherein the copolymer has a number average molecular weight in the range of 3000 to 4000.
- 4. The copolymer of claim 2 wherein the copolymer has a polydispersity index in the range of 2 to 4.
- 5. The copolymer of claim 2 wherein the copolymer has a melting point in the range of 50°C to 70°C.
- 6. The copolymer of claim 5 wherein the copolymer is injectable at temperatures above the melting point.
- 7. The copolymer of claim 2 wherein the copolymer has a hardening point in the range of 30°C to 40°C.
- 8 A copolymer prepared by reacting (i) a caprolactone and (ii) fumaric acid or a salt thereof.
- 9. The copolymer of claim 8 wherein the copolymer is prepared by reacting poly(ε-caprolactone) and fumaryl chloride.
- 10. The copolymer of claim 9 wherein the poly(caprolactone) has a molecular weight in the range of 500-10000 daltons.

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11. The copolymer of claim 8 wherein the copolymer has a melting point between 50°C and 70°C.

- 12. The copolymer of claim 11 wherein the copolymer is injectable at temperatures above the melting point.
- 13. The copolymer of claim 11 wherein the copolymer has a hardening point in the range of 30°C to 40°C.
 - 14. A crosslinkable, biodegradable material comprising: a copolymer including caprolactone units and fumarate units; and a free radical initiator.
 - 15. The material of claim 14 wherein: wherein the material is an injectable bone substitute.
 - 16. The material of claim 11 wherein: wherein the material is an injectable bone cement.
 - 17. The material of claim 14 further comprising: a porogen.
 - 18. The material of claim 14 further comprising: an accelerator.
 - 19. The material of claim 14 wherein: the material does not include a crosslinking agent.
 - 20. The material of claim 14 further comprising: particulate or fiber reinforcement materials.

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21. The material of claim 14 wherein: the reinforcement materials comprise hydroxyapatite.

22. The material of claim 14 wherein:

the copolymer is prepared by reacting (i) poly(ϵ -caprolactone) and (ii) fumaric acid or a salt thereof.

- 23. A scaffold for tissue regeneration, the scaffold comprising: a biodegradable matrix comprising a copolymer including caprolactone units and fumarate units.
- 24. The scaffold of claim 23 wherein: the copolymer is prepared by reacting (i) poly(ε-caprolactone) and (ii) fumaric acid or a salt thereof.
 - 25. The scaffold of claim 23 wherein: the matrix includes particulate or fiber reinforcement materials.
 - 26. The scaffold of claim 25 wherein: the reinforcement materials comprise hydroxyapatite.
 - 27. The scaffold of claim 23 wherein: the scaffold is porous.